

STATE OF ALASKA

Jay S. Hammond, Governor

Annual Performance Report for
ESTABLISHMENT OF GUIDELINES FOR
PROTECTION OF THE SPORT FISH RESOURCES
DURING LAND USE ACTIVITIES

by

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By: Dennis J. Hubartt

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RESEARCH PROJECT SEGMENT

State: ALASKA Name: Sport Fish Investigations
of Alaska

Project No.: F-9-12

Study No.: D-I Study Title: A STUDY OF LAND USE
ACTIVITIES AND THEIR
RELATIONSHIP TO THE
SPORT FISH RESOURCES
IN ALASKA

Job No.: D-I-A Job Title: Establishment of Guidelines
for Protection of the Sport
Fish Resources During Land
Use Activities

Period Covered: July 1, 1979 to June 30, 1980

ABSTRACT

Activities of this job were concentrated in two areas: Cooperative participation with the U.S. Forest Service in the development of a Fisheries Survey Handbook and the finalization of research that describes the use of minnow traps in studying population characterization of rearing salmonids.

Comparison of baited minnow trap catches to Peterson Marked Recapture estimates indicate that minnow trap catch may be used to obtain rough estimates of rearing salmonid populations in small streams. This information is being prepared in detail as a separate Informational Leaflet which will discuss the statistical relationship between catch and estimated population and discuss the problems involved with using catch as a population index.

BACKGROUND

The job, "Establishment of Guidelines for Protection of Sport Fish Resources During Land Use Activities" began in 1973 and focused on the need for cooperation between State and Federal agencies which were concerned with the impact of land use activities on sport fish resources. An important product of this first year was the publication of a pamphlet that presented guidelines for protecting fish habitat during logging operations (U.S. Forest Service, Alaska Department of Fish and Game, and Alaska Department of Natural Resources, 1973).

From 1974 through 1976, project personnel participated in multi- and interdisciplinary surveys (MDT's and IDT's) initiated by the U.S. Forest Service. Post-logging surveys were conducted to evaluate the effects of recommendations made by MDT or IDT participants, and personnel reviewed and commented on Environmental Analysis Reports and Environmental Impact Statements, and conducted short-term surveys in areas affected or to be affected by land use activities.

During 1976 the U.S. Forest Service began a major planning effort for the Tongass National Forest which encompasses most of southeast Alaska. The planning process continued into 1978 and Sport Fish Land Use Project personnel were active participants in a Fisheries Task Force throughout this period. The resultant plan, entitled the "Tongass Land Management Plan" (TLMP), included many of the guidelines and recommendations that had been previously formulated during the course of the Land Use Project.

One result of the TLMP was the realization that more information was needed regarding the ecology of streams in southeast Alaska. Accordingly, in 1979 Land Use personnel studied eleven watersheds throughout southeast Alaska and gathered data on rearing salmonid and aquatic insect populations using the techniques that had been developed during the course of the project. Although the sample size was small, the techniques produced useful information from all the sites and also established baseline data against which future measurements could be compared (Hubartt, 1979).

RECOMMENDATIONS

Research

1. Continue to identify waters important to the sport fish resources and provide recommendations to land managing agencies to protect these resources.
2. Continue to develop and refine field techniques for the quantitative evaluation of populations of rearing salmonids and aquatic insects in cooperation with other agencies.
3. Continue to evaluate the effectiveness of recommendations and guidelines made available to land managing agencies.

Management

1. Continue to monitor changes regarding the designations of lands in southeast Alaska and provide relevant information to area biologists.
2. Techniques which have been developed for assessing the status of populations of rearing salmonids and aquatic insects should be applied to specific management problems as necessary, and should be continually tested, improved, and modified to fit management needs.

Objectives

1. To designate waters important to the sport fish resources and make recommendations to protect this resource during land use activities.
2. To determine the effectiveness of recommendations and guidelines made available to the land managing agencies.
3. To advise industry and the public of the importance of fish habitat and the methods needed to protect this habitat during land use activities.

FINDINGS

Interagency Activities

Project personnel participated with the U.S. Forest Service in a continuing effort to develop standardized procedures for fisheries surveys in streams. Although several modifications to the procedures will probably be necessary, the U.S. Forest Service is producing a Fisheries Survey Handbook to be used in 1980. Hopefully, this effort will encourage both Federal and State agencies involved in stream survey work to use the handbook so that data collected during stream surveys will be useful to all agencies regardless of the agency collecting the data.

A portion of this study was devoted to investigation of procedures to evaluate habitat parameters of small streams that are included in the Fisheries Survey Handbook. The results of these investigations are included in the report on job D-I-B (see Hubartt, 1980).

Development of Field Techniques

Data collected on the use of minnow traps to provide an index of rearing salmonid population size has been completed and is being prepared for publication as a separate Informational Leaflet. The abstract of the publication is as follows:

Land managers often have need for a quick method of determining the abundance of rearing salmonids in small streams. To meet this need, we compared minnow trap catch statistics of Dolly Varden (Salvelinus malma) and coho salmon (Oncorhynchus kisutch) to Peterson Estimates conducted in experimental sections of a stream and found that a significant linear relationship exists between the two. This suggests that the minnow trap catch method can be used as an index of rearing salmonid abundance and has the advantage of requiring less time than mark-recapture estimates as well as minimizing stress on fish. Disadvantages include the inability to attach confidence intervals to the population index and to detect factors such as seasonal movement.

LITERATURE CITED

- Hubartt, D. J. 1979. Establishment of guidelines for the protection of sport fish resources during land use activities. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1978-1979, F-9-11, 20 (D-I-A): 1-40
- Hubartt, D. J. 1980. Ecology of rearing fish. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1979-1980, F-9-12, 21 (D-I-B): in print.

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